WHAT IS CLAIMED IS:

1. A method of treating a cerebral aneurysm, comprising the steps of:

providing an expandable structure movable from a collapsed shape to an expanded shape;

introducing the expandable structure into a blood vessel of a patient;

advancing the expandable structure through the patient's vasculature to a cerebral aneurysm while the expandable structure is in the collapsed position;

moving the expandable structure into the cerebral aneurysm;

expanding the expandable structure to the expanded position in the cerebral aneurysm;

shrinking the wall of the aneurysm; and

leaving the expandable structure in the aneurysm after the shrinking step.

2. The method of claim 1, wherein the shrinking step is carried out until the aneurysmal wall contacts the expandable structure.

3. The method of claim 1, wherein the shrinking step is carried out by delivering electrical energy to the expandable structure to generate heat which shrinks the aneurysm wall.

4. The method of claim 3, further comprising the step of:

delivering saline to the aneurysm while delivering the electrical energy.

5. The method of claim 3, wherein the shrinking step is carried out for at least 5 seconds.

6. The method of claim 1, wherein the shrinking step is carried out by providing a heated fluid in the aneurysm to heat the aneurysmal wall.

7. The method of claim 1, wherein the introducing step is carried out with the expandable structure having a permeable portion when in the expanded position.

8. The method of claim 7, wherein the shrinking step is carried out by delivering RF energy to the aneurysm wherein heated fluid in the aneurysm leaks through the permeable portion and into the parental vessel.

9. The method of claim 1, wherein the introducing step is carried out with the expandable structure being advanced through the patient's vasculature with a catheter, the catheter having a lumen.

10. The method of claim 1, further comprising the steps of:

coupling the lumen to a source of fluid; and

infusing the fluid into the aneurysm through the lumen.

11. The method of claim 10, wherein the infusing step is carried out so that the fluid seals the aneurysm to isolate the aneurysm from the parental vessel.

12. The method of claim 1, wherein the shrinking step is carried out so that the aneurysmal wall contacts the expandable structure and reduces the size of the expandable structure after the expanding step.

13. A method of isolating a cerebral aneurysm from the parental vessel, comprising the steps of:

providing a device movable from a collapsed position to an expanded position, the device having a proximal portion when in the expanded position;

introducing the device into the aneurysm in the collapsed position;

expanding the device to the expanded position after the introducing step;

shrinking the dome of the aneurysm so that that the proximal portion of the expandable device extends around the neck of the aneurysm.

14. The method of claim 13, wherein the providing step is carried out with the proximal portion being permeable, the proximal portion being configured to form a thrombus to isolate the aneurysm from the parental vessel.

15. The method of claim 14, wherein the providing step is carried out with the proximal portion forming a permeable barrier having an opening size of no more than 1 mm when viewed in a direction perpendicular to blood flow through the parental vessel.

16. A system for treating a cerebral aneurysm, comprising:

a shaft having a length and flexibility sufficient to extend into a patient's cerebral vasculature;

an expandable device movable from a collapsed shape to an expanded shape, the expandable device being removably coupled to the shaft;

means for shrinking the aneurysmal wall toward the expandable device when the expandable device is contained within the aneurysm.

17. The system of claim 16, wherein the shrinking means includes an electrical power supply coupled to the expandable device.

18. The system of claim 17, wherein the electrical power supply is an RF generator.

19. The system of claim 18, wherein the expandable device acts as an electrode and is electrically coupled to the RF generator.

20. The system of claim 16, wherein the shaft has a lumen passing therethrough.

21. The system of claim 20, further comprising:

a source of conductive fluid coupled to the lumen.

22. The system of claim 16, wherein the shrinking means is a device selected from the group consisting of RF, resistance heating, laser and chemical action.

23. The device of claim 16, wherein the shrinking means heats the fluid passing through the lumen so that the heated fluid shrinks the aneurysm.

24. A method of treating a cerebral aneurysm, comprising the steps of:

providing an expandable structure movable from a collapsed shape to an expanded shape, the expandable structure having a deforming portion which is displaced beyond the yield strength when moving from the collapsed position to the expanded position;

introducing the expandable structure into a blood vessel of a patient;

advancing the expandable structure through the patient's vasculature to a cerebral aneurysm while the expandable structure is in the collapsed position;

moving the expandable structure into the cerebral aneurysm;

expanding the expandable structure to the expanded position in the cerebral aneurysm; and

leaving the expandable structure in the aneurysm after the expanding step.

25. The method of claim 24, wherein the providing step is carried out with the expandable structure occupying a volume of at least 50-70%.

26. The method of claim 24, wherein the providing step is carried out with the expandable structure having a maximum opening size of no more than 15 mm when in the expanded position.

27. The method of claim 24, wherein the providing step is carried out with the expandable structure having first and second ends, the deforming portion extending between the first and second ends; and

the expanding step is carried out with the first and second ends moving toward one another so that the deforming portion plastically deforms.

28. The method of claim 27, wherein the providing step is carried out with the deforming portion including at least three posts extending between the first and second ends.

29. The method of claim 24, wherein the providing step is carried out with the deforming portion holding a number of flexible filaments in the expanded position, the flexible filaments being deformed elastically when in the expanded position.

30. A device for introduction into a cerebral aneurysm, comprising:

a first end having a first hub;

a second end having a second hub; and

an expandable structure extending between the first and second ends, the expandable structure being movable from a collapsed shape to an expanded shape, the expandable structure having at least two filaments extending between the first and second hubs, the first and second hubs moving toward one another when the expandable structure moves from the collapsed position to the expanded position.

31. The device of claim 30, further comprising:

a locking mechanism which locks the expandable structure in the expanded position.

32. The device of claim 30, further comprising:

a fluid flow path extending through the expandable structure for introduction of a fluid into the aneurysm.

33. The device of claim 30, wherein the expandable structure is naturally biased toward the collapsed condition.

34. A method of treating an aneurysm in the cerebral vasculature of a patient, comprising the steps of:

providing a device having first and second ends and an expandable structure extending between the first and second ends, the expandable structure being movable from a collapsed shape to an expanded shape, the device also having a locking mechanism for locking the expandable structure in the expanded position;

introducing the device into the patient's vascular system with the expandable structure in the collapsed position;

advancing the device through the patient's vascular system with the expandable structure in the collapsed condition;

positioning the device into an aneurysm in the patient's cerebral vasculature;

expanding the expandable structure of the device after the positioning step; and

locking the locking mechanism to hold the expandable structure in the expanded position.

35. The device of claim 34, wherein the providing step is carried out with the expandable structure being naturally biased toward the collapsed position when in the expanded position.

36. The device of claim 34, wherein the providing step is carried out with the expandable structure having a mesh structure.

37. The device of claim 34, wherein the providing step is carried out with the expandable structure having a number of elongate members extending between the first and second ends.

38. The device of claim 34, further comprising the step of:

heating the aneurysm to shrink the aneurysm.

39. The device of claim 34, wherein the heating step is carried out with a heated fluid.

40. The device of claim 34, wherein the heating step is carried out by delivering electrical energy to the expandable portion.

41. The device of claim 34, wherein the providing step is carried out with the expandable structure being substantially cylindrical in the collapsed position, the expandable structure having a longitudinal axis;

the expanding step being carried out with the expandable structure moving radially outward relative to the longitudinal axis.

42. The device of claim 34, wherein the first and second ends move towards one another by a distance of 10-15 mm, the expandable structure having a diameter, the diameter increasing at a portion of the expandable structure between 0.020 and 0.600 inch when moving from the collapsed position to the expanded.

43. A method of treating a cerebral aneurysm, comprising the steps of:

providing a catheter having a cover;

passing the catheter through a patient's cerebral vasculature to an aneurysm;

positioning the cover over the neck of the aneurysm; and

shrinking the aneurysmal wall.

44. The method of claim 43, wherein the shrinking step is carried out by heating the aneurysmal wall.

45. The method of claim 43, wherein the providing step is carried out with the catheter including a lumen having an outlet.

46. The method of claim 45, further comprising:

introducing a fluid into the aneurysm through the lumen.

47. The method of claim 43, further comprising the step of:

introducing an electrode in the aneurysm; and

the shrinking step being carried out by delivering electrical energy to the electrode to heat the aneurysmal wall.

48. The method of claim 47, wherein the electrode introducing step is carried out with the electrode being on a guidewire passing through a lumen in the catheter.

49. The method of claim 48, further comprising the step of:
introducing a second electrode into the patient.

50. The method of claim 49, wherein the second electrode is introduced on the guidewire.

51. The method of claim 49, wherein the second electrode is introduced on the catheter.

52. The method of claim 43, wherein the covering step is carried out with the cover being permeable.

53. The method of claim 43, further comprising the step of:
delivering a substance into the aneurysm after the shrinking step, the substance remaining in the aneurysm to seal the aneurysm.

54. The method of claim 53, wherein the delivering step is carried out with the substance being selected from the group consisting of cyanoacrylates, ethylene vinyl-alcohol, cellulose acetate polymers, and fibrin glues.

55. The method of claim 43, wherein the cover is composed of silicone.

56. A method of treating an aneurysm, comprising the steps of:
providing an expandable device movable from a collapsed position to an expanded position, the expandable device having a first section and a second section;
passing the expandable device through a patient's cerebral vasculature;
introducing the expandable device into an aneurysm in the patient's cerebral vasculature;

expanding the expandable device to the expanded position with the first section positioned adjacent to the neck of the aneurysm and the second section positioned further into the aneurysm;

coupling the expandable device to a source of electric power;

delivering the electric power to the expandable device so that the aneurysm is heated thereby shrinking the aneurysm, the heat being generated by the second section and not the first section so that the neck of the aneurysm is protected.

57. The method of claim 56, wherein the providing step is carried out with the expandable device being permeable when in the expanded position.

58. The method of claim 56, wherein the coupling step is carried out with the source of electric power being an RF generator.

59 . The method of claim 56, wherein the delivering step is carried out with the electric power being monopolar RF with the second section acting as the electrode.

60. The method of claim 56, wherein the delivering step is carried out so that the aneurysm shrinks and contacts the expandable device so that the expandable device is reduced in size from the expanded position.

61. A method for treating an aneurysm and a parent vessel, comprising the steps of:

providing a catheter and a coil, the catheter having a lumen and the coil being positioned in the lumen, the coil being movable within the lumen to extend and retract the coil from the distal end of the catheter;

introducing the catheter into a patient's vascular system;

advancing the catheter to an aneurysm;

filling the aneurysm with a heated fluid;

positioning the coil in the parent artery so that windings are positioned adjacent the neck of the aneurysm to impede flow between the aneurysm and the parent artery.

62. The method of claim 61, wherein the filling step is carried out by introducing a catheter into the aneurysm through the windings in the coil, the catheter having means for heating fluid.

63. The method of claim 62, wherein the filling step is carried out with the heating means being an RF electrode.

64. The method of claim 61, wherein the providing step is carried out with the coil a first deployed position and a second deployed position, the second deployed position having more coil extended from the distal end of the catheter and having greater pitch than when the coil is in the first deployed position.

65. The method of claim 61, wherein the providing step is carried out with the coil being made of a shape memory alloy.

66. A device for regulating fluid flow between an aneurysm and a parent vessel, comprising:

a catheter including a lumen having a distal end; and

a coil positioned within the lumen, the coil being movable within the lumen to extend or retract the coil from the distal end of the lumen, the coil being extending from the lumen to form a coil.

67. The device of claim 66, wherein the coil is movable from a first deployed position to a second deployed position, the exposed portion of the coil extending from the catheter having a greater pitch in the second deployed position than in the first deployed position and being extended further from the distal end of the catheter.

68. The device of claim 67, wherein the coil forms windings having a diameter of 1 mm to 3 mm.

69. A device for heating tissue, comprising:

a shaft having a lumen;

a tip having a chamber therein and a plurality of holes leading to the chamber, the chamber being fluidly coupled to the lumen so that a fluid delivered through the lumen passes into the chamber and out the plurality of holes; and

an RF electrode configured to deliver RF energy from an RF generator, the RF electrode positioned in the chamber.

70. The device of claim 69, further comprising:

a source of conductive fluid coupled to the lumen.

71. The device of claim 69, wherein the shaft has a size of no more than 5 French.

72. The device of claim 69, wherein the plurality of holes in the tip are positioned along sides of the tip.

73. The device of claim 69, wherein the plurality of holes in the tip are positioned at a distal end of the tip.